

DEPARTMENT OF WORKFORCE DEVELOPMENT

BUREAU OF APPRENTICESHIP STANDARDS

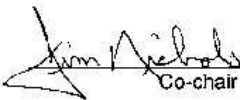
MADISON, WISCONSIN


STATE APPRENTICESHIP STANDARDS

FOR THE

MACHINE TOOL TRADES

  
Bureau Director

  
Co-chair

  
Co-chair

APPROVED AND ADOPTED

December 18, 2003

## FOREWORD

These Apprenticeship and Training Standards for the Machine Tool Trades are sponsored by the State Machine Tool Apprenticeship Advisory Committee.

The increased skills and versatility needed today by the trades require, as never before, the thorough all-around training and experience provided through apprenticeship as conducted under modern methods.

To meet this need, a State Machine Tool Advisory Committee was implemented by the Department of Workforce Development, Bureau of Apprenticeship Standards. Members have been nominated by the respective organizations representing these occupations and have been designated as advisory to the Department in matters relating to the industrial/manufacturing Industry.

These Standards have been adopted as a guide and the minimum standard for employers, employees, and Technical Colleges throughout Wisconsin.

These standards are consistent with the Wisconsin Apprenticeship Law, Wis. Stats. Chapter 106, Wis. Admin Code DWD Chapter 295, Wis. Admin Code DWD 296 and with the Wisconsin Apprenticeship Manual, as revised.

## FINAL SECTION ALIGNMENT

- I. Definitions
- II. Administration
- III. Personnel of State Industrial Manufacturing & Fluid Maintenance Advisory Committee
- IV. Duties of State Industrial Manufacturing & Fluid Maintenance Apprenticeship Advisory Committee
- V. Personnel of Local (In-Plant) Committees
- VI. Duties of Local (In-Plant) Committees
- VII. Minimum Qualifications of Apprentice Applicants
- VIII. Minimum Qualifications of Employers
- IX. Ratio of Apprentices to Journey workers
- X. Apprentice Contracts
- XI. Apprenticeship Terms
- XII. Probationary Period
- XIII. Related Instruction Attendance
- XIV. Schedule of Work Processes
- XV. Conditions of Work
- XVI. Continuity of Employment
- XVII. Evaluation and Completion of Apprentices
- XVIII. Appeal Procedures/Right of Appeal
- XIX. Modification of Standards



## I. DEFINITIONS

- A. **Apprentice** means any person who enters into an apprentice contract with the department and with a sponsor or an apprenticeship committee acting as an agent of the sponsor.
- B. **Apprentice Contract** means any contract or agreement of service, express or implied, between an apprentice, the department, and a sponsor or an apprenticeship committee acting as the agent of a sponsor whereby an apprentice is to receive directly from or through the apprentice's employer, in consideration for the apprentice's services in whole or in part, instruction in any trade, craft, or business.
- C. **Bureau of Apprenticeship Standards (BAS)** is the agency within the Department of Workforce Development charged with the oversight responsibilities of Wisconsin's apprenticeship program. BAS approves all Apprentice Contracts in accordance with Chapter 106 of the Wisconsin Statutes.
- D. **Certificate of Registration** means the acceptance and recording of such program by the department as meeting the basic standards and requirements of the department for approval of such program for federal and state purposes, as shown by a certificate of registration.
- E. **Competency** means the attainment of manual, mechanical or technical skills and knowledge, as specified by an occupational standard and demonstrated by an appropriate written and hands-on proficiency measurement.
- F. **Completion rate** means the percentage of an apprenticeship cohort who receives a certificate of apprenticeship completion within 1 year of the projected completion date. An apprenticeship cohort is the group of individual apprentices registered to a specific program during a 1 year time frame, except that a cohort does not include the apprentices whose apprenticeship agreement has been cancelled during the probationary period or who have transferred.
- G. **Department** means the Department of Workforce Development (DWD) which is the state registration agency for the purposes of 29 CFR 29. The Bureau of Apprenticeship Standards is part of the Department of Workforce Development.
- H. **Electronic media** means media that utilize electronics or electromechanical energy for the end user (audience) to access the content; and includes, but is not limited to, electronic storage media, transmission media, the Internet, extranet, lease lines, dial-up lines, private networks, and the physical movement of removable/transportable electronic media and/or interactive distance learning.
- I. **Employer/Sponsor** means any person, firm or corporation regularly engaged in the hiring or training of apprentices that are qualified to train apprentices.

- J. **Interim credential** means a credential issued by the department, upon request of the appropriate sponsor, as certification of competency attainment by an apprentice.
- K. **Journey worker** means a worker who has attained a level of skill, abilities and competencies recognized within an industry as having mastered the skills and competencies required for the occupation and/or hold a State of Wisconsin certification.
- L. **Local apprenticeship committee** means an in-plant committee.
- M. **Quality Assurance Assessment** means a comprehensive review conducted by the department regarding all aspects of an apprenticeship program's performance.
- N. **Qualified Individual** means an individual who has the skills, knowledge and practical hands-on experience equivalent to an up-to-date journey level person in the Industrial Mechanical & Fluid Maintenance trades. He/she shall also be trained in, and be familiar with, any Maintenance Mechanic, Millwright, Pipefitter safety related work practices.
- O. **Registration of an Apprentice Contract** means the acceptance and recording of an apprentice contract by the department as evidence of the apprentice's participation in a particular registered apprenticeship program.
- P. **Related instruction** means an organized and systematic form of instruction designed to provide the apprentice with the knowledge of the theoretical and technical subjects related to the apprentice's occupation. Such instruction may be given in a classroom, through occupational or industrial courses, or by correspondence courses of equivalent value, electronic media, or other forms of self-study approved by the department.
- Q. **Sponsor** means any employer operating an apprenticeship program and in whose name the apprenticeship program is approved by the Bureau of Apprenticeship Standards.
- R. **State Committee** - The Wisconsin State Industrial Manufacturing & Fluid Maintenance Apprenticeship Advisory Committee is advisory to the Department of Workforce Development and the Bureau of Apprenticeship Standards on matters of apprenticeship and to the Wisconsin Technical College System (WTCS) on matters of related instruction for apprentices.
- S. **Transfer** means a shift of apprenticeship registration from one program to another where there is agreement between the apprentice and the affected apprenticeship committees or program sponsors.
- T. **Unassignment** means the temporary interruption of an apprentice contract.
- U. **Wisconsin Technical College System** is a publicly funded system of colleges subject to Chapter 38 of the WI State Statutes and Technical College System Administrative Rules.



## II. ADMINISTRATION -

The administration of these Standards shall be the responsibility of the Employer. The employer is responsible for the apprentices' instruction and experience as outlined in the schedule of work processes, for the attendance at related instruction classes, and for notifying the Bureau of Apprenticeship Standards in writing of all action as required by the Standards.

## III. PERSONNEL OF STATE MACHINE TOOL ADVISORY COMMITTEE -

**PURPOSE:** Formulate Minimum State Standards (and review them every five years) for the trade and make recommendations regarding changes to the Bureau of Apprenticeship Standards.

This Committee shall be composed of no less than ten (10) nor more than thirty (30) members. The intention is to have fair representation from local committees on the state committee. The Bureau will insure that all areas of the state are properly represented on each state trade committee.

- A. Employer representative names will include nominees submitted to the Bureau of Apprenticeship Standards (Bureau) by employers training apprentices in the Machine Tool trades.
- B. Employee representative names will include nominees submitted by employee organizations or in-plant local committees to the Bureau. In cases where there is no in-plant local committee, nominees will be solicited from employers.
- C. Members will serve for a term of three years and may be renominated for further terms. State committee memberships will be staggered to maintain continuity in functioning. State committee members must:
  - 1) Be currently and actively participating in the trade, and attend at least 75 percent of the meetings over the term of their appointment, unless excused by BAS for good cause.
  - 2) Represent organizations that are actively involved with training apprentices at the local level; or
  - 3) Be involved in the development of emerging trades; or
  - 4) Have been involved in the training of apprentices in the last two years.
- D. Exceptions to these requirements can be made by the Bureau in order to expand female and minority participation on committees.
- E. The committee operates on a consensus based decision-making process. This means that there may be concerns after discussion, but committee members may consent to the proposal anyway and allow it to be adopted. Therefore, reaching consensus does not assume that everyone must be in complete agreement, but that all members can live with the decision. When the committee cannot reach consensus, the BAS will make the final decision.



- F. The Bureau may remove a person from membership on a committee for one or more of the following reasons:
  - 1) Failure to attend at least 75% of the committee meetings over the term of the appointment, unless excused by the Bureau for good cause.
  - 2) Failure to meet the membership requirements under paragraph III D unless an exception is granted under III D as noted above.
  - 3) Violation of any state apprenticeship statute, rule or standard.
- G. Vacancies may be filled, or representatives changed in term, at the request of the appropriate employee organization, local committee or employer.

#### IV. DUTIES OF THE STATE COMMITTEE

- A. Recommend/advise on policy and/or program changes in the trade.
- B. Formulate minimum state standards (and review them every five years) for the trade and make recommendations on changes to the Bureau including:
  - 1) the period of training
  - 2) minimum work process requirements
  - 3) related instruction
  - 4) probation
  - 5) employer requirements to serve as a trainer
  - 6) journey level worker/apprentice ratios
  - 7) apprentice reviews
- C. Recommend curriculum, related instruction and delivery service requirements for the trade to the Bureau and the Wisconsin Technical College System
- D. Assume statewide leadership for the purpose of improving conditions and expanding the number of employers using apprentices in the trade.
- E. Prepare a policy for the trade on proficiency assessment/testing (for work experience and course work) to be utilized by local committees in determining apprenticeship credit for previous experience/education.
- F. Assist in the formation and promotion of local committees where they do not exist.
- G. Review and monitor local committee operations (including biennial reports) and activity levels and recommend changes in operations where appropriate, including AA/EEO.
- H. Assist local committees to work out their programmatic and administrative problems.

I. The committee will follow these operational guidelines:

- 1) Meet at least a minimum of two times a year.
- 2) Elect working officers of the Committee, i.e., a chair and/or co-chairs. Committees will hold an election of officers annually. When an employer representative is elected chair, an employee representative shall be elected co-chair and vice versa.
- 3) Conduct meetings in conformity with the open meeting law of Wisconsin.
- 4) A meeting quorum exists when at least two employer and two employee representatives are present.
- 5) Official meeting minutes will be prepared by the Bureau of Apprenticeship Standards.
- 6) Committee recommendations will be made by consensus.

V. PERSONNEL OF LOCAL (IN-PLANT) COMMITTEES

- A. The purpose of an in-plant committee is to oversee the training of apprentices and ensure that the conditions of the Apprentice Contract are being satisfied by all parties. Every apprentice will have access to and be responsible to an in-plant committee.
- B. Each in-plant committee will have a minimum of four voting members; two employer representatives and two from the skilled workforce. If members are added to a committee, they must have equal employer and employee representation.
- C. An exception may be made to this requirement for employers who have less than five apprentices.
- D. Multi-trade in-plant committees will be authorized provided that at least one member of the committee is a member of the apprentice's trade that is being reviewed.
- E. Where a firm has a bargaining agreement that establishes an in-plant committee, the sponsor will follow the terms of that agreement, providing that the terms of the agreement are not in conflict with state statutes or apprenticeship rules.
- F. All local committee rosters shall be submitted to the Bureau.
- G. Employer members must be:
  - 1) Nominated by other employer members
  - 2) Involved in the training or supervision of skilled workers within the last five years.
- H. Employee members must be:
  - 1) Nominated by employee organizations, local committees or employers
  - 2) A journey level worker and working at the trade or represent active journey level workers

- I. Exceptions to these requirements can be made in order to expand female and minority participation on committees.
- J. Members will serve for a term of three years and may be renominated for further terms. Terms will be staggered to insure that continuity of the committee is maintained.
- K. Members must attend at least 75% of the meetings over the term of their appointment, unless excused for good cause.
- L. An individual may be removed from membership on a committee for one or more the following reasons:
  - 1) Failure to attend at least 75% of the committee meetings over the term of the appointment, unless excused for good cause.
  - 2) Failure to meet the membership requirements under paragraph V E, unless an exception is granted under V E as noted above.
  - 3) Violation of any state apprenticeship statute, rule or standard.

## VI. DUTIES OF LOCAL (IN-PLANT) COMMITTEES

- A. Ensure that apprentices get the required range of work process experience and safeguard the training of apprentices on the job.
- B. Review the status and progress of every apprentice prior to the end of the six month probationary period and recommend any appropriate action to the employer.
- C. Review and make sure that adequate classroom and on-the-job records are kept for apprentices. All reviews should be in writing.
- D. Review and evaluate classroom and on-the-job performance on a regular basis, as recommended by the state committee, (at least annually and a minimum of at least two times during the term of the Apprentice Contract, in person) and before recommending completion to the Bureau.
- E. Recommend credit for previous experience/education in conformity with Council or state trade committee policy and procedures.
- F. Advise the Bureau and Technical Colleges on all matters pertaining to related instruction in the committee area. [Assist in securing related instruction with the state, local Technical College or other provider of related instruction](#)
- G. Respond to surveys and questionnaires sent by the Bureau regarding information on participating employers, apprentices, meetings held and AA/EEO progress.
- H. Conform to the state committee's written meeting procedure requirements, if any

- I. Encourage parties to an Apprentice Contract to bring issues before the local committee. If not resolved, provide recommendations to the Bureau on its resolution.
- J. Take part in statewide trade or industry marketing and apprenticeship promotion.
- K. Recommend modifications to ratios in state standards to help meet workforce needs in conformity with bargaining agreements, when applicable.
- I. Report back to the respective nominating organizations and keep them fully informed and active in promoting the local program.
- J. The committees will follow these operational guidelines:
  - 1) Meet at least twice each year.
  - 2) Keep written minutes of all meetings.
  - 3) Ensure that apprentices are properly registered in conformity with Wisconsin Apprenticeship regulations.

#### VII. MINIMUM QUALIFICATIONS OF APPRENTICES

- A. High School graduate or equivalency, and must be able to furnish record of schooling and grades obtained
- B. Not less than 18 years of age, and must be able to furnish proof of age
- C. Must be physically able to perform the work of the trade with reasonable accommodations and without hazard to themselves or others. Applicants may be required to furnish a statement of physical condition from a physician at the time of the job offer. Applicants may be required to undergo drug or alcohol testing at time of selection as an apprentice.

#### VIII. MINIMUM QUALIFICATIONS OF EMPLOYERS

- A. The employer must insure that apprentices are trained in the core work processes identified for this trade and employ a full time journey worker to supervise the apprentice and insure safe training at all times.
- B. The employer must employ a full time journey worker or work at the trade full time.

#### IX. RATIO OF APPRENTICES -

In order to assure adequate supervision and instruction of all apprentices on-the-job, the maximum ratio of apprentices to journey workers shall be one (1) apprentice for one (1) journey worker.

## X. APPLICANTS' RIGHT OF APPEAL / APPEAL PROCEDURE

In the case of a dispute between the apprentice and the sponsor with regard to an Apprentice Contract, either party may appeal in writing to the BAS.

- A. In cases of a problem or dispute involving a matter of policy, the matter shall be referred to the State Machine Tool Apprenticeship Advisory Committee for review. If the State committee cannot satisfactorily resolve the matter, it will provide the Bureau with its recommendations.
- B. For apprentice applicants who are already employees of the firm, initial appeals should be made in accordance with grievance procedures to either the employer or the local union. If no satisfaction is received from this/these resources, the individual may appeal to BAS. For those applicants who are not an employee of the firm, the initial appeal should be made directly to the BAS. If the decision not to accept the applicant is made by the employer, not the in-plant committee, the appeal should also be made directly to the BAS.
- C. All applicants, employers or apprentices have the right of appeal to the Bureau on any recommendation or action taken by the local committee. The advisory status of a local committee shall include the following statement in their disciplinary actions or denial correspondence:

"Should you feel the recommendation or action taken by the local Apprenticeship Committee to be contrary to the area apprenticeship standards, you have the right to appeal in writing to the Department of Workforce Development, Bureau of Apprenticeship Standards, P. O. Box 7972, Madison, Wisconsin 53707, stating the specific section of said standards or addendum to same which you feel was violated."
- D. Any party to the contract may file an appeal in writing within 20 calendar days of the final decision. When an appeal is received, the BAS Director will review the appeal and issue a written determination within 40 days of the appeal.
- E. If requested in writing within ten days by one of the parties, the Bureau Director's decision may be appealed in writing to the DWD Legal Counsel. The DWD Legal Counsel will review the case and issue a final determination within ten days.
- F. Right to Hearing. A dissatisfied party may file a written request with the BAS or the DWD Legal Counsel for a formal administrative hearing to review the reasonableness of a DWD order as outlined in Chapter 5 of the Wisconsin Apprenticeship Manual. DWD shall respond to a request for an administrative hearing within 20 days. DWD has the discretion to determine whether or not it will hold a hearing. DWD's final decision is reviewable in Circuit Court.
- G. Items not Subject to a Hearing. Actions of the employer that involve the employment relationship and not the apprenticeship program are not subject to a hearing. Violations of employer work rules may not be subject

to a hearing contingent upon a review that the employer is not illegally discriminating in its administration of apprenticeship policy.

## XI. APPRENTICE CONTRACTS

The apprentice shall sign an agreement which shall also be signed by the employer. This agreement shall contain the apprentice's name, address, birth date, sex, trade, starting date of apprenticeship, credit for previous experience, veteran status, and ethnic background. The apprenticeship agreement signed by the apprentice and employer shall be furnished to the Bureau of Apprenticeship Standards for the purpose of registration and collection of national statistics. In the case of cancellation or suspension of the apprenticeship, the Bureau of Apprenticeship Standards shall be notified. Every apprentice agreement entered into under these Standards shall contain the terms and conditions of these Standards as part of the Apprenticeship Agreement. The following shall receive a copy of the agreement:

- 1) The apprentice
- 2) The employer
- 3) The Bureau of Apprenticeship Standards
- 4) The listed Technical College

## XII. TERM OF APPRENTICESHIP

### A. Trade information

1. See attached Exhibit A's
2. Employers have the option of choosing a longer term of apprenticeship and/or pursue implementing competency or hybrid apprentice programs in addition to time-based. Hybrid and competency based programs must be reviewed by the State Industrial Electrical & Instrumentation Apprenticeship Advisory Committee and approved by the BAS.

### B. Competency-Based Approach

Local committees who choose to employ a competency-based approach to apprenticeship must comply with the following requirements:

1. The occupation must be recognized and approved as a competency-based apprenticeable occupation. If the program is not approved by US DOL as a competency based program, the sponsor must consult with the BAS to determine if it is suitable as a competency based program.
2. The on-the-job learning component of the apprenticeship program must be identified in the program standards.
3. The related instruction component of the competency-based approach must comply with all of the provisions of DWD 295 as referenced in the Wisconsin Apprenticeship Manual.

4. Program sponsors must identify within the program standards the required competencies that must be mastered within the program standards, and the required competencies that must be mastered by the apprentice during their apprenticeship.
5. Successful completion of the term of apprenticeship will require that the apprentice demonstrate mastery of identified competencies.
6. Demonstration of the acquisition of the identified competencies must be determined by both written and hands-on proficiency evaluations.
7. All testing and evaluation of the identified competencies must occur in a controlled learning environment that permits accurate and verifiable results by a qualified proctor.
8. Program sponsors must identify and document the methods and means used to qualify testing and evaluation proctors.

#### C. Time Based Approach

The time based approach is the traditional term of apprenticeship and the term is stated in years, months or hours or a combination of thereof. This approach measures an individual skill through completion of at least 8,000 hours of on-the-job learning as described in a work process schedule.

#### D. Hybrid Approach

Local committee's that choose to use the hybrid approach to apprenticeship measures an individual's skills through a combination of hours of on-the-job learning and successful completion of competency as described in a work process schedule. The program must comply with the guidelines for the competency-based portion of the apprentice's term of apprenticeship

### XIII. PROBATIONARY PERIOD

- A. The probationary period may be up to 25% of the term of the apprenticeship but it shall not exceed twelve calendar months.
- B. Termination of the apprenticeship agreement during the probationary period may be made by either party in writing without stated cause. Such notification must be sent to the Bureau.
- C. After the probationary period expires, there must be good cause (add examples) provided to the Bureau for the cancellation of the Apprentice Contract (check legal opinion, such as 90-day waiting period) "Expectation that the apprentice will remain employed with the sponsor for the duration of the apprenticeship?"

(BAS will look into legal options for sponsors that hire apprentices away from other sponsors)

#### XIV. RELATED SCHOOL ATTENDANCE

- A. The apprentice shall attend school and satisfactorily complete the course of instruction recommended by the State Committee for no less than 400 hours unless otherwise approved by the Bureau and the State Committee.
- B. The apprentice shall be paid the same rate for regular school attendance as for work on the job. Apprentices are paid 'straight time' rate for paid school hours. An employer is not required to pay overtime (time and one-half) to apprentices while receiving paid related instruction, unless such requirements are contained in an applicable collective bargaining agreement.
- C. Apprentices shall attend unpaid school or required classes as required by the employer. Required hours shall not exceed 120 unless approved by the State Committee in writing.

#### XV. CREDIT FOR PREVIOUS EXPERIENCE

Apprentices may be eligible for credit and care should be taken in evaluating credit requests to be sure that credit is properly applied.

- A. Previous Apprentice Contract Time Credit: All credit for all previous Apprentice Contract time in the trade (work and school) must be given to apprentices with such experience, unless extenuating circumstances are explained in writing and the credit is not approved by the Bureau.
- B. This credit (unless not approved) must be applied at the beginning of the Apprentice Contract.
- C. If application of the credit advances the apprentice to a higher wage, then that wage must apply.
- C. Credit for Previous Experience: Apprentices may be granted credit for previous work or school experience. Such credit should only reflect actual work time that relates directly to the trade or school time relating directly to the trade related instruction. Credit should be granted prior to the end of the probationary period, or at least as soon as a proper evaluation can be made of the credit request.

If application of the credit advances the apprentice to a higher wage, then that wage must apply.

- D. All credit must be in writing and approved by the Bureau.

#### XVI. SCHEDULE OF PROCESSES TO BE WORKED

(See Trade Information attached.)



XVII. CONDITIONS OF WORK -

The apprentice shall be governed by the same working hours as the journey worker or the employer under whose supervision the apprentice is employed. Under no conditions shall the hours of work conflict with the required hours of school attendance nor with State or Federal Regulations.

XVIII. CONTINUITY OF EMPLOYMENT -

When an apprentice is temporarily laid off in a trade because of business conditions, the apprentice shall be offered reinstatement before any additional apprentices are employed in that trade. An apprentice, suspended for this reason, when reinstated shall complete the time set forth in the training schedule before the next period may be started.

XIX. GRANTING OF CERTIFICATE OF COMPLETION -

Upon successful completion of the apprenticeship under these Standards, the Employer shall request the Bureau of Apprenticeship Standards to issue the apprentice a Certificate of Completion of Apprenticeship. Said Certificate shall be signed by the Employer and the Director of Bureau of Apprenticeship Standards, State of Wisconsin.

XX. CONSULTANTS

Consultants on apprenticeship shall attend meetings upon request of the apprenticeship sponsor and render such assistance that will aid the improvement of the preparation of the apprentice. Consultants will be asked to participate without vote in conference on special problems related to apprenticeship training which affect the agencies they represent. The recognized agency for consultation on apprenticeship training is the Bureau of Apprenticeship Standards.

XXI. MODIFICATION OF STANDARDS

These Standards may be modified at any time by the State Committee. The Bureau of Apprentice Standards shall be advised of any and all modifications and has the final approval. Modifications shall not alter any apprenticeship in force without the consent of all parties concerned.

## Madison WI

Machinist  
2-600280022-01

Approved: December 18, 2003

**EXTENT OF PERIOD OF APPRENTICESHIP:** The term of apprenticeship shall be 8,320 hours. The probationary period shall be the first 2080 hours of employment, but in no case shall it exceed twelve calendar months. Hours of labor shall be the same as established for other skilled employes in the trade.

**SCHOOL ATTENDANCE:** The apprentice shall attend the assigned Wisconsin Technical College System for paid related instruction four hours per week or the equivalent and satisfactorily complete the prescribed course material for a minimum of 432 hours, unless otherwise approved by the department. The employer must pay for related instruction hours at the same rate per hour as for services performed.

**SCHEDULE OF PROCESSES TO BE WORKED:** In order to obtain well-rounded training and thereby qualifying as a skilled worker in the trade, the apprentice shall have experience and training in the following areas. This instruction and experience shall include the following operations but not necessarily in the sequence given. Time spent on specific operations need not be continuous.

	<u>Approximate Hours</u>
Precision Measurement and Inspection—to include Geometric Dimensioning and Tolerancing, using Prints of Drawings, if Applicable, and Cutting Tools	400
* Lays out and verifies dimensions of parts, using precision measuring and marking instruments and knowledge of general mathematics and trigonometry.	
* Measures, examines and tests products to ensure conformance to specifications.	
* Confers with engineering, supervisory and manufacturing personnel to exchange technical information.	
Milling (removed “machines”) —to include Manual and/or CNC Controlled	2000
* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.	
* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.	
* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media	
* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.	
* Cleans, lubricates and maintains tools and equipment to remove grease, rust, debris, and foreign matter.	
Drilling (removed “machines”) –to include Manual and/or CNC Controlled	200
* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.	
* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.	
* Calculates and sets controls to regulate machining, or enters commands	

- to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (removed “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

#### Turning —to Include Manual and/or CNC Controlled

2000

- \* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.
- \* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (removed “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

#### Cut-Off (removed “machines”) —to Include Manual and/or CNC Controlled

200

- \* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.
- \* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce a quality product efficiently and economically.
- \* Cleans, lubricates and maintains (removed “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

#### Materials and Metallurgy

200

- \* Selects, examines and tests materials to ensure product conformance to specifications.
- \* Measures, examines and tests product to detect defects and ensure conformance to specifications.
- \* Operates brazing, heat-treating and welding equipment to cut, solder and braze metals.

#### Bench Work/Layout (Assembly)

500

- \* Assembles parts into completed units using jigs, fixtures, hand and power tools.
- \* Fabricates, assembles and modifies tooling, such as jigs, fixtures, templates, molds or dies to produce parts and assemblies to specification.
- \* Dismantles equipment, using hand and power tools, to examine parts for defect or to remove defective parts.
- \* Cuts and shapes sheet metals and heats and bends metals to specified shapes.

- \* Confers with engineering, supervisory and manufacturing personnel to exchange technical information.
- \* Designs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Evaluates procedures and recommends changes or modifications for efficiency and adaptability to setup and production.

#### Local Optional Work Processes:

- \* May include **grinding**, EDM, jigs and fixtures, CAD/CAM, CNC programming and planning, indexing/rotary devices, turret lathe, broaching and/or keyseating, gearing, jig boring and welding.
- \* These hours may also be used for additional work in any of the above listed work processes or others as deemed by the employer.

2388  
(Added 600 hours from  
"grinding". BAS  
approves increasing  
the Local Options  
hours in excess of the  
20% cap)

#### Paid Related Instruction

432  
(The focus group  
requested the  
minimum hours of  
hours. PRI for a four-  
year program must be  
at least 400 hours. So,  
BAS kept the original  
amount of hours, 432.

TOTAL

8320

The above schedule is to include all operations and such other work as is customary in the trade.

### MINIMUM COMPENSATION TO BE PAID:

Base skilled wage rate N/A per hour.

If at any time the base skilled wage rate rises or falls, the apprentice's wage shall be adjusted proportionately. The wage rate of apprentices employed in this trade and this firm shall be based on the base skilled wage rate stated above.

All apprentices are covered by State and Federal Wage and Hour Standard requirements. All apprentices shall be paid no less than the minimum wage established under regulations.

The apprentice's wage must average no less than 60% of the skilled wage rate during the term of the apprenticeship (DWD 295.04). The apprentice may not be started at less than minimum wage.

**Credit Provisions:** The apprentice, granted credit at the start or during the term of the apprenticeship, shall be paid the wage rate of the pay period to which such credit advanced the apprentice.

Work Credit: N/A

School Credit: N/A

Total Credit to be applied to the term of the apprenticeship: N/A

### **SPECIAL PROVISIONS:**

The apprentice will attend and participate in the Transition to Trainer course during the last six (6) months of the Apprentice Contract.

The descriptive information listed under each Work Process in the Schedule of Processes to be Worked identifies types of tasks that are included under the work process. The apprentice is not expected to do all of the tasks identified.

The apprentice will complete standard Red Cross First Aid and CPR courses during the first year of the apprenticeship and maintain such certification throughout the apprenticeship.

State Machine Tool Committee  
Madison WI

Mold Maker (Die Cast) (Plastic)  
2-601280030-01

Approved: December 18, 2003

**EXTENT OF PERIOD OF APPRENTICESHIP:** The term of apprenticeship shall be 10,400 hours. The probationary period shall be the first 2080 hours of employment, but in no case shall it exceed twelve calendar months. Hours of labor shall be the same as established for other skilled employes in the trade.

**SCHOOL ATTENDANCE:** The apprentice shall attend the assigned Wisconsin Technical College System for paid related instruction four hours per week or the equivalent and satisfactorily complete the prescribed course material for a minimum of 576 hours, unless otherwise approved by the department. The employer must pay for related instruction hours at the same rate per hour as for services performed.

**SCHEDULE OF PROCESSES TO BE WORKED:** In order to obtain well-rounded training and thereby qualifying as a skilled worker in the trade, the apprentice shall have experience and training in the following areas. This instruction and experience shall include the following operations but not necessarily in the sequence given. Time spent on specific operations need not be continuous.

	<u>Approximate Hours</u>
Precision Measurement and Inspection-- to include Geometric Dimensioning and Tolerancing	<del>500</del> 400
* Lays out and verifies dimensions of parts, using precision measuring and marking instruments and knowledge of general mathematics and trigonometry.	
* Measures, examines and tests products to ensure conformance to specifications	
* Confers with engineering, supervisory and manufacturing personnel to exchange technical information.	
Milling ( <del>deleted "Machines"</del> ) -- to Include Manual and/or CNC Controlled	2000
* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.	
* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.	
* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.	
* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.	
* Cleans, lubricates and maintains ( <del>deleted "machines"</del> ) tools and equipment to remove grease, rust, debris and foreign matter.	
Drilling ( <del>deleted "Machines"</del> ) --to Include Manual and/or CNC Controlled	200
* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.	

- \* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (deleted “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

Turning (deleted “Machines”) --to Include Manual and/or CNC Controlled

300

- \* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tools.
- \* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (deleted “machines”) tools and equipment to remove grease, rust debris and foreign matter.

Grinding (deleted “Machines”) (Precision)—to include Manual and/or CNC Controlled

1200  
800

- \* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.
- \* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (deleted “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

Cut-Off (deleted “Machines”) —to Include Manual and/or CNC Controlled

200

- \* Selects, aligns and secures holding fixtures, cutting tools, attachments, ...accessories and materials onto machine tool.
- \* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining or enters commands to retrieve, input or edit computerized machine control media
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (deleted “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

Materials and Metallurgy	300
* Selects, examines and tests materials to ensure product conformance to specifications.	
* Measures, examines and tests product to detect defects and ensure conformance to specifications.	
* Operates brazing, heat-treating and welding equipment to cut, solder and braze metals.	
Jigs and Fixtures	400
* Fabricates, assembles and modifies tooling, such as jigs, fixtures, templates molds or dies to produce parts and assemblies to specification.	
* Designs fixtures, tooling and experimental parts to meet special engineering/production needs.	
(Deleted "Basic") Mold Making	1500
* Studies blueprint or specifications of part, tool or mold/die.	+400 grinding
* Fabricates mold components using variety of machine tools and operations.	+100 precision
* Confers with engineering, supervisory and manufacturing personnel to exchange technical information.	=2000
* Assembles and adjusts mold components so that mold produces piece parts to specification.	
Bench Work/Layout (Assembly)	1500
* Assembles parts into completed units using jigs, fixtures, hand and power tools.	
* Dismantles equipment, using hand and power tools, to examine parts for defect and wear or to remove defective parts.	
* Smooths and polishes flat and contoured surfaces using hand and power tools.	
* Evaluates procedures and recommends changes or modifications for efficiency and adaptability to setup and production.	
Local Optional Work Processes:	1724
* May include CAD/CAM, CNC programming and planning and mold/die designing.	
* These hours may also be used for additional work in any of the above listed work processes or others as deemed by the employer.	
Paid Related Instruction	576
	(No change. Focus group proposed 512 hours to match tech college delivery; denied by BAS.
	10400
TOTAL	

The above schedule is to include all operations and such other work as is customary in the trade.

### **MINIMUM COMPENSATION TO BE PAID:**

Base skilled wage rate N/A per hour.

If at any time the base skilled wage rate rises or falls, the apprentice's wage shall be adjusted



proportionately. The wage rate of apprentices employed in this trade and this firm shall be based on the base skilled wage rate stated above.

All apprentices are covered by State and Federal Wage and Hour Standard requirements. All apprentices shall be paid no less than the minimum wage established under regulations.

The apprentice's wage must average no less than 60% of the skilled wage rate during the term of the apprenticeship (DWD 295.04). The apprentice may not be started at less than minimum wage.

**Credit Provisions:** The apprentice, granted credit at the start or during the term of the apprenticeship, shall be paid the wage rate of the pay period to which such credit advanced the apprentice.

Work Credit: N/A

School Credit: N/A

Total Credit to be applied to the term of the apprenticeship: N/A

**SPECIAL PROVISIONS:**

The apprentice will attend and participate in the Transition to Trainer course during the last six (6) months of the Apprentice Contract.

The descriptive information listed under each Work Process in the Schedule of Processes to be Worked identifies types of tasks that are included under the work process. The apprentice is not expected to do all of the tasks identified.

The apprentice will complete standard Red Cross First Aid and CPR courses during the first year of the apprenticeship and maintain such certification throughout the apprenticeship.

State Machine Tool Committee  
Madison WI

Electrical Discharge Machinist  
2-609380010-01

Approved: December 18, 2003

**EXTENT OF PERIOD OF APPRENTICESHIP:** The term of apprenticeship shall be 3 years of 6,240 hours. The probationary period shall be the first 1560 hours of employment, but in no case shall it exceed twelve calendar months. Hours of labor shall be the same as established for other skilled employes in the trade.

**SCHOOL ATTENDANCE:** The apprentice shall attend the assigned Wisconsin Technical College System for paid related instruction four hours per week or the equivalent and satisfactorily complete the prescribed course material for a minimum of 576 hours, unless otherwise approved by the department. The employer must pay for related instruction hours at the same rate per hour as for services performed.

**SCHEDULE OF PROCESSES TO BE WORKED:** In order to obtain well-rounded training and thereby qualifying as a skilled worker in the trade, the apprentice shall have experience and training in the following areas. This instruction and experience shall include the following operations but not necessarily in the sequence given. Time spent on specific operations need not be continuous.

Electrical Discharge Machine Hole Drilling

Approximate Hours  
750

- \* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.
- \* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains machines, tools and equipment to remove grease, rust, debris and foreign matter.

Basic Machine Tools

500

- \* Safely operates metalworking machine tools, such as lathe, milling machine grinder, etc and adjusts the machine tool to produce quality product efficiently and economically.
- \* Selects, aligns and secures holding fixtures onto machine tool.
- \* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.
- \* Cleans, lubricates and maintains machines, tools and equipment to remove grease rust, debris and foreign matter.

State Machine Tool Committee  
Madison WI

Electrical Discharge Machinist  
2-609380010-01

Jig and Fixture Design and Construction	250
<ul style="list-style-type: none"><li>* Fabricates, assembles and modifies tooling, such as jigs, fixtures, templates, molds or dies to produce parts and assemblies to specification.</li><li>* Designs fixtures, tooling and experimental parts to meet special engineering/production needs.</li></ul>	
Computer-Aided Manufacturing	500
<ul style="list-style-type: none"><li>* Sorts shop orders into groups to maximize materials utilization and minimize machine setup.</li><li>* Revises programs to eliminate instruction errors and omissions.</li><li>* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.</li><li>* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.</li><li>* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.</li><li>* Cleans, lubricates and maintains machines, tools and equipment to remove grease, rust, debris and foreign matter.</li></ul>	
Programming	750
<ul style="list-style-type: none"><li>* Studies sample parts, blueprints, drawings, and engineering information to determine methods and sequence of operations.</li><li>* Prepares geometric layout from graphic displays using computer-assisted drafting software or drafting instruments and graph paper.</li><li>* Writes instruction sheets, cutter lists and machine instruction programs to guide setup.</li><li>* Analyzes drawings, specifications and design data to calculate dimensions, tool selection, machine speeds and feed rates.</li><li>* Determines reference points, machine cutting paths or hole locations and computes angular and linear dimensions, radii and curvatures.</li><li>* Compares computer printout with original program sheet to verify accuracy of instructions.</li><li>* Enters computer commands to store or retrieve parts patterns, graphic displays or programs to transfer data to other media.</li><li>* Loads and unloads disks or tapes and observes operation of machine on trial run to test programmed instructions.</li><li>* Reviews shop orders to determine job specifications and requirements.</li></ul>	
Computer-Aided Design Drafting	500
<ul style="list-style-type: none"><li>* Studies sample parts, blueprints, drawings and engineering information to determine methods and sequence of operations.</li><li>* Prepares geometric layout from graphic displays, using computer-assisted drafting</li></ul>	

software.

State Machine Tool Committee  
Madison WI

Electrical Discharge Machinist  
2-609380010-01

- \* Writes instruction sheets, materials lists and miscellaneous information to guide setup and machining operations.
- \* Determines reference points or hole locations and computes angular and linear dimensions, radii and curvatures.
- \* Enters computer commands to store or retrieve parts patterns, graphic displays or programs to transfer data to other media.
- \* Reviews shop orders to determine job specifications and requirements.

Electrical Discharge Machine (Set-up/ Operation/Troubleshooting)

2414

- \* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.
- \* Designs/fabricates/installing fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains machines, tools and equipment to remove grease, rust, debris and foreign matter.

Paid Related Instruction

576

TOTAL

6240

The above schedule is to include all operations and such other work as is customary in the trade.

**MINIMUM COMPENSATION TO BE PAID:**

Base skilled wage rate N/A per hour.

If at any time the base skilled wage rate rises or falls, the apprentice's wage shall be adjusted proportionately. The wage rate of apprentices employed in this trade and this firm shall be based on the base skilled wage rate stated above.

All apprentices are covered by State and Federal Wage and Hour Standard requirements. All apprentices shall be paid no less than the minimum wage established under regulations.

The apprentice's wage must average no less than 60% of the skilled wage rate during the term of apprenticeship (DWD 295.04). The apprentice may not be started at less than minimum wage.

**Credit Provisions:** The apprentice, granted credit at the start or during the term of the apprenticeship, shall be paid the wage rate of the pay period to which such credit advanced the apprentice.

Work Credit: N/A

School Credit: N/A

Total Credit to be applied to the term of the apprenticeship: N/A  
State Machine Tool Committee  
Madison WI

Electrical Discharge Machinist  
2-609380010-01

**SPECIAL PROVISIONS:**

The apprentice will complete standard Red Cross First Aid and CPR courses during the first year of the apprenticeship and maintain such certification throughout the apprenticeship.

The apprentice will attend and participate in the Transition to Trainer course during the last six (6) months of the Apprentice Contract.

The descriptive information listed under each Work Process in the Schedule of Processes to be Worked identifies types of tasks that are included under the work process. The apprentice is not expected to do all of the tasks identified.

State Machine Tool Committee  
Madison WI

Tool Maker  
2-601280042-01

Approved: December 18, 2003

**EXTENT OF PERIOD OF APPRENTICESHIP:** The term of apprenticeship shall be 8,320 hours. The probationary period shall be the first 2080 hours of employment, but in no case shall it exceed twelve calendar months. Hours of labor shall be the same as established for other skilled employes in the trade.

**SCHOOL ATTENDANCE:** The apprentice shall attend the assigned Wisconsin Technical College System for paid related instruction four hours per week or the equivalent and satisfactorily complete the prescribed course material for a minimum of 432 hours, unless otherwise approved by the department. The employer must pay for related instruction hours at the same rate per hour as for services performed.

**SCHEDULE OF PROCESSES TO BE WORKED:** In order to obtain well-rounded training and thereby qualifying as a skilled worker in the trade, the apprentice shall have experience and training in the following areas. This instruction and experience shall include the following operations but not necessarily in the sequence given. Time spent on specific operations need not be continuous.

	<u>Approximate Hours</u>
Precision Measurement and Inspection—to Include Geometric Dimensioning and Tolerancing, Using Prints of Drawings, and Cutting Tools, if Applicable	<del>500</del> 400
* Lays out and verifies dimensions of parts, using precision measuring and marking instruments and knowledge of general mathematics and trigonometry.	
* Measures, examines and tests products to ensure conformance to specifications.	
* Confers with engineering, supervisory and manufacturing personnel to exchange technical information.	
Milling ( <del>deleted “machines”</del> ) --to Include Manual and/or CNC Controlled	<del>1900</del>
* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.	+100 from
* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.	”Precision”
* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.	= 2000
* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.	
* Cleans, lubricates and maintains ( <del>deleted “machines”</del> ) tools and equipment to remove grease, rust, debris and foreign matter.	
Drilling ( <del>deleted “machines”</del> ) --to Include Manual and/or CNC Controlled	200
* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.	

- \* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (deleted “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

Turning (deleted “machines”) to Include Manual and/or CNC Controlled

300

- \* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.
- \* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (deleted “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

Grinding (deleted “machines”) (Precision)--to Include Manual and/or CNC Controlled

1200  
800

- \* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.
- \* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (deleted “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

Cut-Off (deleted “machines”) to Include Manual and/or CNC Controlled

200

- \* Selects, aligns and secures holding fixtures, cutting tools, attachments accessories and materials onto machine tool.
- \* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (deleted “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

Materials and Metallurgy	300
<ul style="list-style-type: none"> <li>* Selects, examines and tests materials to ensure product conformance to specifications.</li> <li>* Measures, examines and tests product to detect defects and ensure conformance to specifications.</li> <li>* Operates brazing, heat-treating and welding equipment to cut, solder and braze metals.</li> </ul>	
Jigs and Fixtures	400
<ul style="list-style-type: none"> <li>* Fabricates, assembles and modifies tooling, such as jigs, fixtures templates, molds or dies to produce parts and assemblies to specification.</li> <li>* Designs fixtures, tooling and experimental parts to meet special engineering/production needs.</li> </ul>	
Bench Work/Layout (Assembly)	1000
<ul style="list-style-type: none"> <li>* Assembles parts into completed units using jigs, fixtures, hand and power tools.</li> <li>* Fabricates, assembles and modifies tooling, such as jigs, fixtures, templates molds or dies to produce parts and assemblies to specification.</li> <li>* Dismantles equipment, using hand and power tools, to examine parts for defect or to remove defective parts.</li> <li>* Cuts and shapes sheet metals and heats and bends metals to specified shapes.</li> <li>* Confers with engineering, supervisory and manufacturing personnel to exchange technical information.</li> <li>* Designs fixtures, tooling and experimental parts to meet special engineering/production needs.</li> <li>* Evaluates procedures and recommends changes or modifications for efficiency and adaptability to setup and production.</li> </ul>	
Local Optional Work Processes	1788
<ul style="list-style-type: none"> <li>* May include EDM, jigs and fixtures, CAD/CAM, CNC programming and planning, indexing/rotary devices, turret lathe, broaching and/or keyseating, gearing, jig boring and welding.</li> <li>* These hours may also be used for additional work in any of the above listed work processes or others as deemed by the employer.</li> </ul>	
Paid Related Instruction	432
(required minimum for four years is 400)	
TOTAL	8320
(Increased from 8176 for uniformity)	



State Machine Tool Committee  
Madison WI

Tool Maker  
2-601280042-01

The above schedule is to include all operations and such other work as is customary in the trade.

**MINIMUM COMPENSATION TO BE PAID:**

Base skilled wage rate N/A per hour.

If at any time the base skilled wage rate rises or falls, the apprentice's wage shall be adjusted proportionately. The wage rate of apprentices employed in this trade and this firm shall be based on the base skilled wage rate stated above.

All apprentices are covered by State and Federal Wage and Hour Standard requirements. All apprentices shall be paid no less than the minimum wage established under regulations.

The apprentice's wage must average no less than 60% of the skilled wage rate during the term of the apprenticeship (DWD 295.04). The apprentice may not be started at less than the minimum wage.

**Credit Provisions:** The apprentice, granted credit at the start or during the term of the apprenticeship, shall be paid the wage rate of the pay period to which such credit advanced the apprentice.

Work Credit: N/A

School Credit: N/A

Total Credit to be applied to the term of the apprenticeship: N/A

**SPECIAL PROVISIONS:**

The apprentice will attend and participate in the Transition to Trainer course during the last six (6) months of the Apprentice Contract.

The descriptive information listed under each Work Process in the Schedule of Processes to be Worked identifies types of tasks that are included under the work process. The apprentice is not expected to do all of the tasks identified.

The apprentice will complete standard Red Cross First Aid and CPR courses during the first year of the apprenticeship and maintain such certification throughout the apprenticeship.

State Machine Tool Committee  
Madison WI

Tool And Die Maker  
2-601260010-01

December 18, 2003

**EXTENT OF PERIOD OF APPRENTICESHIP:** The term of apprenticeship shall be 10,400 hours. The probationary period shall be the first 2080 hours of employment, but in no case shall it exceed twelve calendar months. Hours of labor shall be the same as established for other skilled employes in the trade.

**SCHOOL ATTENDANCE:** The apprentice shall attend the assigned Wisconsin Technical College System for paid related instruction four hours per week or the equivalent and satisfactorily complete the prescribed course material for a minimum of 576 hours, unless otherwise approved by the department. The employer must pay for related instruction hours at the same rate per hour as for services performed.

**SCHEDULE OF PROCESSES TO BE WORKED:** In order to obtain well-rounded training and thereby qualifying as a skilled worker in the trade, the apprentice shall have experience and training in the following areas. This instruction and experience shall include the following operations but not necessarily in the sequence given. Time spent on specific operations need not be continuous.

	<u>Approximate Hours</u>
Precision Measurement and Inspection--to Include Geometric Dimensioning and Tolerancing Using Prints or Drawings, if Applicable	500
* Lays out and verifies dimensions of parts, using precision measuring and marking instruments and knowledge of general mathematics and trigonometry.	400
* Measures, examines and tests products to ensure conformance to specifications.	
* Confers with engineering, supervisory and manufacturing personnel to exchange technical information.	
Milling ( <del>deleted "Machines"</del> )--to Include Manual and/or CNC Controlled	2000
* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.	
* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.	
* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.	
* Safely operates and adjusts the machine tool	

- to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (deleted “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

Drilling (deleted “machines”)--to Include Manual and/or CNC Controlled

200

- \* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.
- \* Designs/fabricates/installs fixtures, tooling experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (deleted “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

Turning (deleted “machines”)--to Include Manual and/or CNC Controlled

300

- \* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.
- \* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (deleted “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

Grinding (Precision)--to Include Manual and/or CNC Controlled

1200

- \* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.
- \* Designs/fabricates/installs fixtures, tooling

800

and experimental parts to meet special engineering/production needs.

- \* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (deleted “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

Cut-Off (deleted “machines”)--to Include Manual and/or CNC Controlled

200

- \* Selects, aligns and secures holding fixtures, cutting tools, attachments, accessories and materials onto machine tool.
- \* Designs/fabricates/installs fixtures, tooling and experimental parts to meet special engineering/production needs.
- \* Calculates and sets controls to regulate machining, or enters commands to retrieve, input or edit computerized machine control media.
- \* Safely operates and adjusts the machine tool to produce quality product efficiently and economically.
- \* Cleans, lubricates and maintains (deleted “machines”) tools and equipment to remove grease, rust, debris and foreign matter.

Materials and Metallurgy

300

- \* Selects, examines and tests materials to ensure product conformance to specifications.
- \* Measures, examines and tests product to detect defects and ensure conformance to specifications.
- \* Operates brazing, heat-treating and welding equipment to cut, solder and braze metals.

Jigs and Fixtures	400
<ul style="list-style-type: none"> <li>* Fabricates, assembles and modifies tooling, such as jigs, fixtures, templates, molds or dies to produce parts and assemblies to specification.</li> <li>* Designs fixtures, tooling and experimental parts to meet special engineering/production needs.</li> </ul>	
(Deleted "Basic") Die Making	<del>1500</del>
<ul style="list-style-type: none"> <li>* Studies blueprint or specifications of part, tool or die.</li> <li>* Fabricates die components using variety of machine tools and operations.</li> <li>* Confers with engineering, supervisory and manufacturing personnel to exchange technical information.</li> <li>* Assembles and adjusts die components so that die produces piece parts to specification.</li> </ul>	+400 from Grinding +100 from Precision = 2000
Bench Work/Layout (Assembly)	1500
<ul style="list-style-type: none"> <li>* Assembles parts into completed units using jigs, fixtures, hand and power tools.</li> <li>* Dismantles equipment, using hand and power tools, to examine parts for defect and wear or to remove defective parts.</li> <li>* Smooths and polishes flat and contoured surfaces using hand and power tools.</li> <li>* Evaluates procedures and recommends changes or modifications for efficiency and adaptability to setup and production.</li> </ul>	
Local Optional Work Processes	1724
<ul style="list-style-type: none"> <li>* May include EDM, jigs and fixtures, CAD/CAM. CNC programming and planning and stamping die designing.</li> <li>* These hours may also be used for additional work in any of the above listed work processes or others as deemed by the employer.</li> </ul>	
Paid Related Instruction	576
	(Focus group recommended 512 to match tech college delivery; denied by BAS).
TOTAL	10400

The above schedule is to include all operations and such other work as is customary in the trade.

## **MINIMUM COMPENSATION TO BE PAID:**

Base skilled wage rate N/A per hour.

If at any time the base skilled wage rate rises or falls, the apprentice's wage shall be adjusted proportionately. The wage rate of apprentices employed in this trade and this firm shall be based on the base skilled wage rate stated above.

All apprentices are covered by State and Federal Wage and Hour Standard requirements. All apprentices shall be paid no less than the minimum wage established under regulations.

The apprentice's wage must average no less than 60% of the skilled wage rate during the term of the apprenticeship (DWD 295.04). The apprentice may not be started at less than minimum wage.

**Credit Provisions:** The apprentice, granted credit at the start or during the term of the apprenticeship, shall be paid the wage rate of the pay period to which such credit advanced the apprentice.

Work Credit: N/A

School Credit: N/A

Total Credit to be applied to the term of the apprenticeship: N/A

## **SPECIAL PROVISIONS:**

The apprentice will attend and participate in the Transition to Trainer course during the last six (6) months of the Apprentice Contract.

The descriptive information listed under each Work Process in the Schedule of Processes to be Worked identifies types of tasks that are included under the work process. The apprentice is not expected to do all of the tasks identified.

The apprentice will complete standard Red Cross First Aid and CPR courses during the first year of the apprenticeship and maintain such certification throughout the apprenticeship.

State Machine Tool Committee  
Madison WI

Patternmaker (Deleted "Metal") All-around  
2-600280050-01

Approved: December 18, 2003

**EXTENT OF PERIOD OF APPRENTICESHIP:** The term of apprenticeship shall be 5 years of 10,400 hours. The probationary period shall be the first 2080 hours of employment, but in no case shall it exceed twelve calendar months. Hours of labor shall be the same as established for other skilled employes in the trade.

**SCHOOL ATTENDANCE:** The apprentice shall attend the assigned Wisconsin Technical College System for paid related instruction four hours per week or the equivalent and satisfactorily complete the prescribed course material for a minimum of 576 hours, unless otherwise approved by the department. The employer must pay for related instruction hours at the same rate per hour as for services performed.

**SCHEDULE OF PROCESSES TO BE WORKED:** In order to obtain well-rounded training and thereby qualifying as a skilled worker in the trade, the apprentice shall have experience and training in the following areas. This instruction and experience shall include the following operations but not necessarily in the sequence given. Time spent on specific operations need not be continuous.

	<u>Approximate Hours</u>
General Shop Work: Shop cleaning, material handling, machine maintenance.	520
General Machining: Manual and/or CNC controlled	1560
General Pattern Tooling: Gating, rigging, mounting, fitting, layout, repair, and bench work.	1560
Simple Pattern Tooling--Layout and Construction: Manual and/or CNC controlled, duplicating and CAM machining.	2080
Complex Pattern Tooling--Design and Construction: Manual and/or CNC controlled, duplicating, CAD design and CAM machining.	2080
Local Optional Work Processes: <u>These hours may include: General wood pattern finishing and construction; plastic construction.; and/or CNC programming</u>	2024 (Focus group recommended)

These hours may also be used for additional work in any of the above listed processes or others as deemed by the employer.

\_Paid Related Instruction

decreasing PRI by 64 hours, and adding the hours here, making 2088). Denied by BAS.

576

(Focus group recommended 512, but denied by BAS).

TOTAL

10400

The above schedule is to include all operations and such other work as is customary in the trade.

### **MINIMUM COMPENSATION TO BE PAID:**

Base skilled wage rate N/A per hour.

If at any time the base skilled wage rate rises or falls, the apprentice's wage shall be adjusted proportionately. The wage rate of apprentices employed in this trade and this firm shall be based on the base skilled wage rate stated above.

All apprentices are covered by State and Federal Wage and Hour Standard requirements. All apprentices shall be paid no less than the minimum wage established under regulations.

The apprentice's wage must average no less than 60% of the skilled wage rate during the term of the apprenticeship (DWD 295.04). The apprentice may not be started at less than minimum wage.

**Credit Provisions:** The apprentice, granted credit at the start or during the term of the apprenticeship, shall be paid the wage rate of the pay period to which such credit advanced the apprentice.

Work Credit: N/A

School Credit: N/A

Total Credit to be applied to the term of the apprenticeship: N/A

### **SPECIAL PROVISIONS:**

The apprentice will attend and participate in the Transition to Trainer course during the last six (6) months of the apprenticeship contract.

The apprentice will complete standard Red Cross First Aid and CPR courses during the first year of the apprenticeship and maintain such certification throughout the apprenticeship.



State Machine Tool Committee  
Madison WI

Patternmaker Wood  
2-661281022-01

*BAS wants to phase this out and promote Patternmaker- All Around*

Approved: December 18, 2003

**EXTENT OF PERIOD OF APPRENTICESHIP:** The term of apprenticeship shall be 5 years Of 10,400 hours. The probationary period shall be the first 2080 hours of employment, but in no case shall it exceed twelve calendar months. Hours of labor shall be the same as established for other skilled employees in the trade.

**SCHOOL ATTENDANCE:** The apprentice shall attend the assigned Wisconsin Technical College System for paid related instruction four hours per week or the equivalent and satisfactorily complete the prescribed course material for a minimum of 576 hours, unless otherwise approved by the department. The employer must pay for related instruction hours at the same rate per hour as for services performed.

**SCHEDULE OF PROCESSES TO BE WORKED:** In order to obtain well-rounded training and thereby qualifying as a skilled worker in the trade, the apprentice shall have experience and training in the following areas. This instruction and experience shall include the following operations but not necessarily in the sequence given. Time spent on specific operations need not be continuous.

	<u>Approximate Hours</u>
General Shop Work: Shop cleaning, material handling, machine maintenance.	520
General Wood Pattern Finishing: Sanding, filets and painting.	1300
General Wood Pattern Construction: Gating, rigging, gluing, repair bench work.	1300
Simple Wood Pattern Tooling--Layout and Construction: Manual, CNC and CAM machining.	2080
Complex Wood Pattern Tooling--Design and Construction: Manual, CNC, CAD design and CAM machining.	2080
Plastic Construction: Laminating, fabricating and pouring.	520
Local Optional Work Processes:	2024

These hours may also be used for additional work in any of the above listed processes or others as deemed by the employer.

Paid Related Instruction	576
TOTAL	10400

The above schedule is to include all operations and such other work as is customary in the trade.

### **MINIMUM COMPENSATION TO BE PAID:**

Base skilled wage rate N/A per hour.

If at any time the base skilled wage rate rises or falls, the apprentice's wage shall be adjusted proportionately. The wage rate of apprentices employed in this trade and this firm shall be based on the base skilled wage rate stated above.

All apprentices are covered by State and Federal Wage and Hour Standard requirements. All apprentices shall be paid no less than the minimum wage established under regulations.

The apprentice's wage must average no less than 60% of the skilled wage rate during the term of the apprenticeship (DWD 295.04). The apprentice may not be started at less than minimum wage.

**Credit Provisions:** The apprentice, granted credit at the start or during the term of the apprenticeship, shall be paid the wage rate of the pay period to which such credit advanced the apprentice.

Work Credit: N/A

School Credit: N/A

Total Credit to be applied to the term of the apprenticeship: N/A

### **SPECIAL PROVISIONS:**

The apprentice will attend and participate in the Transition to Trainer course during the last six (6) months of the Apprentice Contract.

The apprentice will complete standard Red Cross First Aid and CPR courses during the first year of the apprenticeship and maintain such certification throughout the apprenticeship.

State Machine Tool Committee  
Madison WI

Patternmaker All Around  
2-693280014-01

*See Revisions to Patternmaker Metal*

Approved: December 18, 2003

**EXTENT OF PERIOD OF APPRENTICESHIP:** The term of apprenticeship shall be 5 years of 10,400 hours. The probationary period shall be the first 2080 hours of employment, but in no case shall it exceed twelve calendar months. Hours of labor shall be the same as established for other skilled employes in the trade.

**SCHOOL ATTENDANCE:** The apprentice shall attend the assigned Wisconsin Technical College System for paid related instruction four hours per week or the equivalent and satisfactorily complete the prescribed course material for a minimum of 576 hours, unless otherwise approved by the department. The employer must pay for related instruction hours at the same rate per hour as for services performed.

**SCHEDULE OF PROCESSES TO BE WORKED:** In order to obtain well-rounded training and thereby qualifying as a skilled worker in the trade, the apprentice shall have experience and training in the following areas. This instruction and experience shall include the following operations but not necessarily in the sequence given. Time spent on specific operations need not be continuous.

	<u>Approximate Hours</u>
General Wood Pattern Finishing: Sanding, filets and painting.	620
General Wood Pattern Construction: Gating, rigging, gluing, repair, and bench work.	620
Simple Wood Pattern Tooling--Layout and Construction: Manual, CNC and CAM machining.	1040
Complex Wood Pattern Tooling--Design and Construction: Manual, CNC, CAD design and CAM machining.	1040
Plastic Construction: Laminating, fabricating and pouring.	320
General Machining Operations: Manual and CNC controlled.	780
General Pattern Tooling: Gating, rigging, mounting, fitting, layout, repair and bench work.	780
Simple Pattern Tooling--Layout and Construction:	1040

Manual, CNC, duplicating and CAM machining.

Complex Pattern Tooling--Design and Construction: Manual, CNC, duplicating, CAD design and CAM machining.	1040
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General Shop Work: Shop cleaning, material handling and machine maintenance.	520
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Local Optional Work Processes: These hours may also be used for additional work in any of the above listed work processes or others as deemed by the employer.	2024
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Paid Related Instruction	576
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TOTAL	10400
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The above schedule is to include all operations and such other work as is customary in the trade.

## **MINIMUM COMPENSATION TO BE PAID:**

Base skilled wage rate N/A per hour.

If at any time the base skilled wage rate rises or falls, the apprentice's wage shall be adjusted proportionately. The wage rate of apprentices employed in this trade and this firm shall be based on the base skilled wage rate stated above.

All apprentices are covered by State and Federal Wage and Hour Standard requirements. All apprentices shall be paid no less than the minimum wage established under regulations.

The apprentice's wage must average no less than 60% of the skilled wage rate during the term of the apprenticeship (DWD 295.04). The apprentice may not be started at less than minimum wage.

**Credit Provisions:** The apprentice, granted credit at the start or during the term of the apprenticeship, shall be paid the wage rate of the pay period to which such credit advanced the apprentice.

Work Credit: N/A

School Credit: N/A

Total Credit to be applied to the term of the apprenticeship: N/A

## **SPECIAL PROVISIONS:**

The apprentice will attend and participate in the Transition to Trainer course during the last six (6) months of the Apprentice Contract.

The apprentice will complete standard Red Cross First Aid and CPR courses during the first year of the apprenticeship and maintain such certification throughout the apprenticeship.